Reviewer's report

Title: Quantitative ultrasound does not identify patients with an inflammatory disease at risk of vertebral deformities

Version: 1 Date: 12 November 2007

Reviewer: Tuan V Nguyen

Reviewer's report:

General

In osteoporosis, the utility of QUS is controversial because it is not clear whether it has a role in the diagnosis of the disease and in the prediction of fracture risk. This study can potentially contribute to the literature. The study was well conducted with appropriate methodology. The manuscript is well written with clear rationale and interpretation. However, there are still rooms for further improvement. Here I raise some points, most of them are related to data analysis, that I hope the authors will take into account in their next submission:

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. It would be more informative if the authors could provide details of the study design, study subjects. How were they recruited or identified?

2. Presumably the study was approved by an ethics committee. If that is the case, please state so.

3. More details of statistical analysis should be provided. For example, did the authors check for assumptions of their model of analysis?

4. What was the correlation between QUS and FNBMD. Is this correlation comparable to previous estimates from other studies?

5. It is not clear what “three separate analyses” mean. Do the authors mean univariate analyses?

6. The expression of “Per 1 SD T-score” (page 6) is rather odd, because the T-score is expressed per SD change from “young normal”. Therefore, SD of SD is difficult to understand. Please clarify!

7. Patients with IBD may have greater risk of vertebral deformity. Moreover, men tend to have greater risk of vertebral fracture than women (32% vs 14%), so sex could be an important confounder as well. It is strongly recommended that both sex and IBD should be taken into account in the analysis.

8. It seems clear from the authors’ data (Table 3) that hand QUS was not
predictive of vertebral fracture. However, what happen if the authors consider both QUS and FNBMD in the same model, does QUS increase the fit of the multivariable logistic regression model?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

9. The word “risk” (vertebral deformity risk) in the Abstract is strictly incorrect, because the unit is odd (not probability of vertebral deformity).

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.